

REMARKS

Claims 1-34 are currently pending. According to the Office Action mailed June 7, 2004 (hereinafter the "6/7/04 OA"), claims 19-32 are allowed. Claims 1-18, 33 and 34 are rejected. The following remarks will respectively address the rejections made by the Examiner in the 6/7/04 OA.

Basis for Rejections

The Examiner rejected claims 1-10 and 33 under 35 U.S.C. 112 for failure to comply with the enablement requirement. According to the Examiner, claims 1-5 and 33 are not enabled because the "signals are not combined using a single combination step as recited in claims," and claims 6-10 are not enabled because the second new output signal is not combined with the reference signal itself. The Examiner also rejected claims 1-5 and 33 for failure to provide basis for the limitation "a third signal" in claims 1 and 33.

The Examiner also rejected claims 11, 12, 14, 17, 18 and 34 under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 5,987,075 (hereinafter "Abe et al"). According to the Examiner, Abe et al discloses an apparatus for converting a RF signal whose frequency is solely responsive to a predetermined signal frequency, and whose phase is responsive to that of the RF signal.

The Examiner also rejected claims 13, 15 and 16 under 35 U.S.C. 103(a) in light of Abe et al. According to the Examiner, Abe et al. discloses an apparatus for converting a RF signal whose frequency is solely responsive to a predetermined signal frequency, and whose phase is responsive to that of the RF signal, and it was obvious to one of ordinary skill in the art at the time of the invention to include features, such as power splitter, automatic gain circuit, and

converting of a RF signal to an intermediate signal, which are required respectively in claims 13, 15 and 16.

Rejection – 35 U.S.C. 112

According to 6/7/04 OA, the Examiner rejected claims 1-5 and 33 under 35 U.S.C. 112 for lack of basis for the claim limitation, “a third signal”. Claims 1 and 33 are hereby amended. After amended, the claim language requires the use of “another signal having a predetermined frequency”. As described in the specification, the present invention describes the use of another signal (F2.CRY) having a predetermined frequency. See Formula 6, page 11, ln. 8. This is to distinguish from the “radio frequency (RF) signal” to be down converted and its reference signal. Thus, claims 1 and 33, as well as claims 2-5 which are dependent on claim 1, are fully enabled. Applicant respectfully requests rejection of claims 1-5 and 33 under 35 U.S.C. 112 to be withdrawn.

The Examiner also rejected claims 1-5 and 33 for lack of enabling disclosure. According to the Examiner, claims 1-5 and 33 are not enabled because the “signals are not combined using a single combination step as recited in claims,” and claims 6-10 are not enabled because the second new output signal is not combined with the reference signal itself. Applicant amended claims 1 and 33. These amendments are incorporated into claims 2-5 via dependency. As shown in Figure 6, the amendment reflects that a RF signal is first combined with a signal (F2.CRY) having a predetermined frequency, and the output signal is then combined with a reference signal. Applicant believes that these amendments overcome the Examiner’s rejections under 35 U.S.C. 112.

Applicant also amends claim 6 by adding the claim limitation "phase-shifted" reference signal. Applicant believes that this amendment overcomes the Examiner's rejection of claims 6-10 under 35 U.S.C. 112.

Rejections – 35 U.S.C. 102 and 103

The Examiner also rejected claims 11, 12, 14, 17, 18 and 34 under 35 U.S.C. 102(e) as being anticipated by Abe et al. According to the Examiner, Abe et al discloses an apparatus for converting a RF signal whose frequency is solely responsive to a predetermined signal frequency, and whose phase is responsive to that of the RF signal. Applicant respectfully traverses the rejection.

The present invention describes a radio frequency signal receiver which is particularly suitable for phase measurement. In contrast, Abe et al describes a FSK signal receiver which is applied mainly in digital communication and the FSK signal receiver of Abe et al employs a different method.

As shown in Figure 13, Abe et al. describes modulation of two baseband signals 12 and 13. To do so, signals generated by a local oscillator 21 are split into two channels (col. 22, lns. 16–32). In one channel, the signal 22 generated by the local oscillator 21 is phase shifted before being combined with one of the baseband signals. In another channel, the signal is directly combined with the other baseband signals in a mixer 25. The output signals from these channels are then modulated again in a subtractor 26. In other words, the signals generated by the local oscillator are respectively combined with each baseband signal. In contrast, claim 1 of the present invention states as follows:

A method using an electronic circuit comprising: combining a radio frequency (RF) signal, and another signal which has a predetermined frequency to generate an output signal, which is further combined with the RF signal's reference signal to obtain a

new signal, wherein the new signal's frequency is solely responsive to the predetermined frequency and the new signal's phase is responsive to that of the RF signal.

Therefore, the method and circuit described in Abe et al are different from the method described and claimed in the present application.

Furthermore, as shown in Figure 13, the output signal is not a signal having a frequency which "is solely responsive to the predetermined frequency" while its phase is responsive to that of the RF signal as required in claims of the present invention.

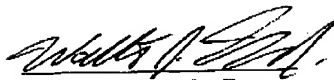
Thus, Abe et al does not anticipate the claims of the present invention. Applicant respectfully requests the rejection of claims 11, 12, 14, 17, 18 and 34 under 35 U.S.C. 102 to be withdrawn.

The Examiner also rejected claims 13, 15 and 16 under 35 U.S.C. 103(a) for being obvious in light of Abe et al. As described above, Abe et al does not teach a method of converting a RF signal whose frequency is solely responsive to a predetermined signal frequency, and whose phase is responsive to that of the RF signal. Thus, Applicant respectfully requests the rejection of claims 13, 15 and 16 under 35 U.S.C. 103(a) to be withdrawn.

Enclosed please find a credit card payment for a total fee of \$490. In the event that the Examiner has any further concerns, Applicant requests a call to be made to Applicant's attorney at the number listed below.

Respectfully submitted,

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